



**Flanders
Scientific
Inc.**

Automatic Volumetric Calibration Instructions - DM Series

ver.1.1

Flanders Scientific, Inc.
6215 Shiloh Crossing
Suite G
Alpharetta, GA 30005
Phone: +1.678.835.4934
Fax: +1.678.804.1882
E-Mail: Support@FlandersScientific.com
www.FlandersScientific.com

Automatic Volumetric Calibration provides a simple, fast, and accurate way to calibrate your FSI monitor. This automatic calibration routine is currently compatible with the Colorimetry Research CR100, the Klein Instruments K10A, and the Minolta CA310.

Before plugging your probe into your monitor you will want to ensure that the following prerequisites are met:

1. Verify your monitor is running firmware version 2.0.0-2299 or later.
2. Ensure that your colorimeter has the correct matrix or matrices stored on it for the display or displays you wish to measure. The name of the colorimeter matrix must match the model name of the monitor you wish to calibrate. Valid matrix names are **DM170**, **DM240**, and **DM250**.
3. On DM170 and DM240 disconnect all signal cables from the monitor if possible. For DM250 please see the *optimizing calibration for RGB Top Emission OLEDs* topic on page 3 of this document.

Automatic Calibration Steps

Step 1: With the monitor powered on plug the probe into the monitor's USB Type A Port.

Step 2: From the Monitor's Color Management Menu select GaiaColor AutoCalibration, confirm that you want to start alignment, then select the probe you will use from the list of available options.

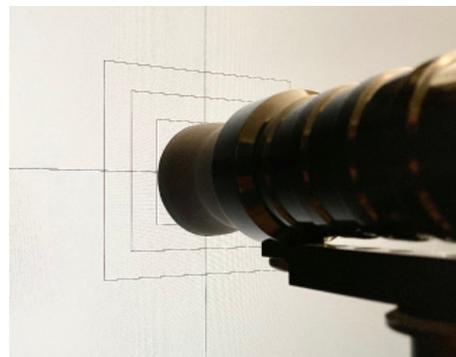
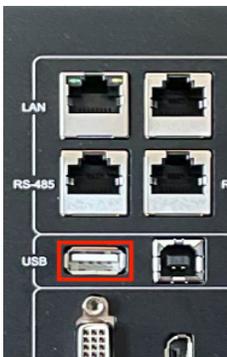
Step 3: Use the on-screen guides to position your probe correctly in the center of the screen.

Step 4: If your monitor is already warmed up you can Press Enter on the monitor at any time to start the automatic calibration routine. If your monitor was not previously warmed up you can simply leave the probe plugged into the monitor and the calibration routine will start automatically after one hour.

Step 5: The calibration will take approximately 7 to 8 minutes to complete depending on the probe / monitor combination in use. Once the alignment data is saved you will be prompted to reboot the monitor to complete the process.

Step 6: LUTs for any Gamut, EOTF, and Color Temperature combination will be automatically generated, saved, and applied on demand the first time you select them. This process takes approximately 10 seconds.*

**Once LUTs have been automatically generated and saved for any given configuration you will be able to switch to these selections instantly in the future without having to wait 10 seconds for the LUTs to be created for that configuration. By automatically generating LUTs on demand only as needed no time is wasted calculating and saving LUTs for configurations you will not use.*



Tips and Troubleshooting

Issue / Topic	Solution / Tip
Calibration will not start and monitor shows "Please connect Meter to the monitor!"	This message can occur if the probe you are connecting does not match the probe you selected from the monitor's menu when starting Automatic Calibration. This message can also appear if you do not have a correctly named matrix loaded to the probe. For example, if connecting to a DM170 a matrix named DM170 must be stored on the probe. After some firmware updates it may be necessary to power cycle the monitor twice before probes will be recognized again. If the problem continues disconnect the probe, power cycle the monitor, and try again.
Is disconnecting all signal cables before starting automatic calibration required?	No, but disconnecting cables allows the monitor to generate its own screen sync whereas leaving a signal connected forces the monitor to sync to the connected signal's frame rate. If a signal is left connected and that signal format changes, drops, or is unstable it can cause the automatic calibration to fail or produce a poor calibration result. If this happens simply restart calibration. For the DM240 and DM170 disconnecting cables if possible is a best practice, for the DM250 please see the optimizing calibration for RGB Top Emission OLEDs topic for further considerations.
Optimizing calibration for RGB Top Emission OLEDs	The DM250 and other RGB Top Emission OLED panels exhibit small shifts in native panel response depending on signal / screen refresh rate. It is therefore a best practice to optimize your calibration for the frame rate you plan on using most often. If no signal is connected during AutoCal the monitor's calibration will be optimized for 30P and 60P signals. If you wish to optimize calibration for 24P or 25P instead simply connect a stable 24P or 25P signal to the monitor during AutoCal. Calibration results will remain quite good for all frame rates regardless of the sync used during AutoCal, but best results will always be found at the refresh rate used during AutoCal.
The monitor or probe was unplugged before calibration completed	Previous calibration data is not deleted until the new calibration completes successfully so a mid-calibration power interruption to monitor or probe is not generally a problem. Simply unplug the probe from the monitor, power cycle the display, then reconnect the probe and start again.
Can I start my calibration right away or is warm-up necessary?	Best results will be obtained by calibrating a monitor that has had time to warm-up and stabilize. If the monitor was already in use before you begin calibration then you can typically start your calibration immediately. If your monitor was just recently turned on and you have the time available the monitor has an automatic 1 hour warm-up countdown timer built-in to autostart your calibration after warm-up. The DM170, DM240, and DM250 all stabilize fairly quickly so if you are pressed for time starting calibration without extensive warm-up will still yield good results, but the best practice when time is available is to allow for 30 to 60 minutes of warm-up. Keeping your probe plugged into the monitor during the warm-up period is also a good practice to allow the probe to warm-up and stabilize as well.
Poor results or calibration failure when using CR100	When using the CR100 please ensure that Exposure Multiplier is set to 1, Sync is set to Auto, and Max Flicker Frequency Search is not set higher than 150Hz. Incorrect probe settings can cause problems during AutoCal.
OLED Boot Cycle	When turning the DM250 on it may take up to 45 seconds for the full boot cycle to complete. The image may momentarily flash as it reaches its final calibrated position.